

The Diffusion of Management Accounting Innovations in Dependent (Subsidiary) Organisations and MNCs

Hassan Yazdifar (Salford University - UK)
h.yazdifar@salford.ac.uk

Davood Askarany (Auckland University - New Zealand)
d.askarany@auckland.ac.nz

Danture Wickramasinghe (Glasgow University - UK)
danture.wickramasinghe@gla.ac.uk

Ahmad Nasser (University of Sistan and Baluchestan - Iran)
nasser@acc.usb.ac.ir

Ashraful Alam (Salford University - UK)
m.a.alam@salford.ac.uk

Abstract

Responding to the increasing changes in technology through the proliferation of globalisation, a range of management accounting innovations (MAIs) have emerged. Concerning these MAIs, researchers have put forward alternative views ranging from rational-economic perspectives to social-organisational process perspectives which explore more dynamic consequences of MAIs including how MAIs are adopted and implemented differently in different organisational settings. This paper contributes to the latter and discusses the network view and subsidiaries capabilities both absorptive and combinative in diffusion of MAIs in group organisations and identifies four possible sources of diffusion of MAIs which have not been discussed in the literature.

Key words: Dependent organisations; inter-subsidiary relations; management accounting innovations; activity based costing; activity based management; balanced scorecard; benchmarking; target costing; absorptive and combinative capabilities; CIMA members

Acknowledgement: The authors gratefully acknowledge the financial supports from CIMA.

1. Introduction

The last three decades have witnessed a surge of innovation in management accounting (MA) techniques and practices. Academic research on MA innovations (MAIs) has also flourished and now constitutes a substantial but rather diverse literature (Euske and Malina, 2013; Ittner and Larcker, 2001). An important stream of research concerns the diffusion of MAIs across organisations (Askarany *et al.*, 2010; Alcouffe

et al., 2008; Tillmann and Goddard, 2008; Ax and Bjørnenak, 2007), but little is known about the diffusion of MAIs in group and MNCs which are conceived as “differentiated networks” (Dossi and Patelli, 2010). This paper contributes to literature by examining how MAIs are diffused in dependent organisations (subsidiaries of group and MNCs) in comparison to independent organisations to better understand the nature of MA change and channels of diffusion of MAIs in group and complex organisations. The study identifies four channels of diffusion in group organisations, namely: (1) ‘group-wide decision’ through *vertical relationship*, the next two channels via *lateral relationships*: (2) ‘adopted from another subsidiary within the group’, (3) ‘developed from a joint decision by subsidiaries’ and (4) ‘decided by the subsidiary itself, without any involvement of parent and/or other subsidiaries’. The literature on MAIs lacks studies on identifying these channels and also is silent on the second and third channels. Therefore, the influence of lateral relationships on diffusions of MAIs in group organisations requires further examination which is the subject of the present study.

While we acknowledge the disagreements amongst researchers regarding the definitions of innovation in general and what MAIs are (Ax and Bjørnenak, 2007), in this paper, we will follow the definition of Rogers (1995:11): “An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption.”, and will focus on five MAIs namely, (1) activity based costing (ABC), (2) activity based management (ABM), (3) balanced scorecard (BSC), (4) benchmarking, and (5) target costing (TC). The extant literature substantiates that these MAIs are popular techniques: see Naranjo-Gil *et al.* (2009), for ABC, BSC and benchmarking; for ABM see Baird *et al.* (2004); for TC see Yazdifar and Askarany (2012) and Ax *et al.* (2008). Similar views were expressed by the CIMA members who were interviewed; hence, our choice.

On the question of diffusion of new management ideas, researchers tend to hold two alternative theoretical perspectives: the rational and the interpretive. The followers of the former perspective hold the view that adopters are rational and make technically efficient independent choices, and that the social and organisational contexts in which such adoptions take place are taken for granted (e.g., Rogers, 2003; 1995). By contrast, the latter perspective explores consequences that are more dynamic. Here, researchers examine the differences between early and late adopters, the effects of supply and demand forces, the corporate and national culture, the social and economic consequences and the bundling effects of innovations (Bol and Moers, 2010; Modell, 2009; Kennedy and Fiss, 2009; Ax and Bjørnenak, 2007). These latter attempts identify various influencing factors that might appear in the adoption and implementation processes of MAIs (Alcouffe *et al.*, 2008). For example, Van der Stede (2003) identified the effects of national culture, while Bol and Moers (2010) discussed the role of learning in the diffusion process. Some researchers have also examined the role of other organisations and also the roles of management accountants in relation to MAIs (e.g. Emsley, 2005). Hence, MAIs may not only be adopted for efficiency reasons. Rather, adoption may occur through the nature of relationships with other organisational partners, such as parents or other subsidiaries (Bol and Moers, 2010; Yazdifar *et al.*, 2008a,b), and with the help of management accountants (Naranjo-Gil *et al.*, 2009; Baldvinsdottir *et al.*, 2009).

In the literature on MAIs and diffusion, the notion of “relationship” has been overlooked (Chenhall, 2008). In defining the relationships between organisations, the nature of the parent-subsidiary relationship, and its impact on the extent to which MAIs are diffused in such organisations, cannot be easily ignored, as many large organisations are configured in relational terms (see Hashai, 2009; Gupta and Govindarajan, 1991).

Arguably, which management practices a subsidiary may adopt, and what issues might arise in such adoption, depend on the nature of such relationships. For example, whether or not parents are powerful enough to impose the adoption of new management practices on subsidiaries depends on to what extent the subsidiary is “dependent” upon such impositions (Kogut and Zander, 1993; Abrahamson, 1991). Hence, the question of “dependency” invites us to investigate an interesting theoretical phenomenon in relation to the diffusion of MAIs. In spite of the fact that MA researchers have begun to see how MAIs are diffused among subsidiaries (e.g. Bol and Moers, 2010; Yazdifar *et al.*, 2008a; Yazdifar and Tsamenyi, 2005), this dependency perspective remains, as yet, unexplored. Concerning this broader question, the following questions are posed: (1) Is the extent of the diffusion of MAIs in dependent (subsidiary) organisations different from such diffusions in independent organisations? (2) Does the extent of such diffusions in dependent organisations occur through vertical relationships (i.e. through parental involvement), through multiple lateral relationships or through the help of in-house management accountants? (3) Are such diffusions implemented more successfully in dependent organisations (having both internal and external group networks) or in independent and non-group organisations?

In addressing question 1, the study will try to achieve a theoretical aim and examines whether the institutional environment in group organisations results in difference in the diffusion of innovations from the same in non-group organisations, and hence different diffusion rates of MAIs? Beyond academia, an understanding of such institutional differences may also guide the practising managers who, due to intensifying national and international competition and reduced organisational slack, are concerned not only with diffusion rates, but also wish to maximise the benefit from such diffusions by retaining the most technically efficient MAIs (Abrahamson, 1991).

Answering question 2 would provide theoretical knowledge about the methods of diffusion of MAIs in subsidiary organisations and the accountant’s participation in strategic decision making processes such as adoption of MAIs in group organisations in order “to better understand the nature of accounting change” (Alcouffe, 2008, p.1). The analyses would also provide some practical knowledge for managers who are concerned with the role of inter-subsidiary relationships and communications between subsidiaries in the adoption of innovations. Finally, question 3, which leads to comparison and contrasting of the nature of the diffusion of MAIs between group and non-group organisations, opens up a debate into whether success is contingent on the organisational networks both *vertical* and *lateral* in group organisations in comparison with non-group organisations. The analysis sheds light on how the logics of adoption interact with subsequent implementation activities (cf. Kennedy and Fiss, 2009). Thus, the study makes both theoretical and practical contributions to literature on diffusion of MAIs in general and focuses on the diffusions of MAIs in group organisations.

This study has benefited from a mixed-method approach where the equal importance of quantitative data, which represents “objective” facts, and qualitative data, which represents “discursive and subjective” interpretations of such “facts” (Modell, 2005, 2010) can be seen. Quantitative data was collected from a wide range of respondents, through the use of a questionnaire regarding the adoption rate and implementation levels of MAIs, i.e. research questions 1 and 3. The qualitative data was collected through interviews, which were aimed at gathering “ideas” about how subsidiary organisations adopt and implement MAIs and the role of management accountants in such processes, which is the subject of research question 2 and provides further insights about other research questions. In so doing, the issues of validation were addressed, not only through this combinative effort but also through follow-up

enquiries. Lillis and Mundy (2005) observe that this method closes the gaps between surveys and case studies. Based on this methodological stance, the data was collected through 584 questionnaire responses by members of the CIMA and follow-up interviews with 56 respondents from organisations operating in the UK, Australia and New Zealand. While the questionnaires were directed to both dependent and independent organisations, the focus was on an illustration of the diffusion of MAIs in dependent organisations. Hence, the interviews were conducted only with the respondents working in dependent organisations.

The paper is structured thus. Section 2 presents a literature review of the diffusion of (MA) innovations, with special attention to such diffusions in group organisations and the implication of the role of management accountants therein. Section 3 describes the research methodology and methods adopted. Section 4 analyses the findings of the survey and interviews and discusses their implications for our understanding of MA change in different settings. Section 5 offers the conclusions.

2. Diffusions, MAIs and Dependent Organisations

2.1 Research on the Diffusion of Management Ideas - A Point of Departure

As alluded above, diffusion research in management has manifested two competing views: rational-economic perspectives and social-organisational process perspectives. For rationalists, innovations emerge for economic and rational reasons and organisations adopt them to enhance efficiency (see Rogers, 1983). For process theorists, ideas are diffused through complex relationships such as “boundary spanning processes”, whereby organisations develop networks with external constituencies (Modell, 2009; Yazdifar *et al.*, 2008a; Ax and Bjørnenak, 2007). Other researchers have tried to integrate both views (Bjørnenak, 1997). Research into the diffusion of MAIs flows from this development.

Being embraced by the competing views on diffusion of innovations, there are several empirical studies in accounting aiming to contribute to the debates. For example, Bjørnenak (1997) examined the diffusion of ABC across Norwegian manufacturing organisations where he found three types of diffusion processes. The first relies upon ‘skilled workers moving’ about and causing change due to their knowledge of ABC. The second is ‘contagious diffusion’, which occurs when *information* is spread in a smooth, continuous and random way. The third is ‘hierarchical diffusion’, which occurs when information is dispersed through a trickle-down process from large to intermediate to small units. However, the study, did not examine hierarchical diffusion in depth. In particular, the above and other studies in the MA literature do not examine the diffusion process and channels of diffusion of MAIs in group organisations and MNCs which are conceived as “differentated networks” (Dossi and Patelli, 2010) with ‘complex combination of various elements’ (Dossi and Patelli, 2010) and form an important part of the world economy. Consequently, our knowledge of the effect of ownership structure (dependent vs. independent) on the diffusion and implementation of MAIs is limited (Kraus and Lind, 2010; Lapsley and Wright, 2004) and the present study aims to contribute to that. Section 2.2 below is devoted to a brief review of literature on the diffusion of innovations in group organisations and discusses ‘parent-subsidiary’ (or *vertical*) and ‘subsidiary-subsidiary’ (or *lateral*) relationships which are relevant to the focus of the present study.

2.2. Diffusion of MAIs in Dependent Organisations

Group organisations and MNCs have long been conceptualised as superior to alternative organisational configurations with their ability to acquire and utilise knowledge across borders (Mudambi, 2002; Gupta and Govindarajan, 2000). Focusing on the hierarchical structures of these organisations, numerous studies have examined the effects of knowledge transfers to their subsidiaries and considered the parent organisation as the focal unit of analysis (Michailova and Mustaffa, 2012). However, over the past two decades, an increasing number of studies have shifted their attention to the subsidiary as the central point of examination, considering it as the “strategic leader” (Bartlett and Ghoshal, 1986), the “global innovator”, the “integrated player” (Gupta and Govindarajan, 1991), and the “world mandate” (Birkinshaw and Morrison, 1995). Consequently, subsidiaries are increasingly acknowledged as sources of knowledge, both for parent organisations and for peer subsidiaries (Michailova and Zhan, 2015).

This development points to inter-subsidiary ties being important in sharing and transferring knowledge. However, MA studies have paid little attention to understanding the processes of such knowledge transfer between subsidiaries and to evaluate their effects (cf. Bol and Moers, 2010). Instead, most MA studies in group organisations and MNCs have relied on the thesis of “traditional hierarchical structures” and have examined MA changes imposed or directed by parent organisations, which is known as *intracorporate isomorphism* (Van der Stede, 2003). This critical gap is problematic because group organisations and MNCs increasingly desire to leverage knowledge adopted from externals or created by their various subsidiaries to be available for their peer subsidiaries and knowledge to flow among its units. However, few studies have empirically examined such diffusion processes (Bol and Moers, 2010). The examination of the diffusion of MAIs in groups and MNCs in this study as the first study in the literature, requires further discussion of intra- and inter-subsidiaries relationships. Accordingly, the following subsections will first deal with the parent-subsidiary relationships and then subsidiary-subsidiary relationship which will be followed by a brief review of subsidiaries’ capabilities in adopting new techniques.

2.2.1 Parent-subsidiary relationships (network of organisational units) and the diffusion of MAIs

Researchers who follow ‘traditional hierarchical structure’ in groups and MNCs and use forced-selection theories assume that ownership structure of group organisations and the existence of the parent company would result in different types of administrative technology, control systems and MIS in subsidiary companies (Yazdifar and Tsamenyi, 2005). With regard to the administrative technology, for example, it is argued that parent organisations may or may not have conflicting preferences as to whether they want their subsidiaries to use a particular administrative technology or not (Covaleski and Dirsmith, 1988). When parent and subsidiary organisations’ interests and preferences towards a particular administrative technology coincide, both parties will act for diffusion, implementation and retention of that technology. However, when the parent organisations have diverse interests and preferences from those of the subsidiaries, some parent companies would exert political pressures encouraging the continuous use of an existing administrative technology; others would try to force the rejection of the new administrative technology (Abrahamson, 1991) “calling for uniform formalized procedures” (Van Der Stede, 2003, P.268). For example, the case study undertaken by Yazdifar *et al.* (2009) discusses how a parent organisation used budgetary control and capital investment rules

to impose (by financially supporting) its preferred administrative innovations instead of supporting those proposed by the subsidiary, which were not in line with the parent organisation's strategy. Thus, the MA technique adopted by the parent organisation was trickling down from the parent organisation to subsidiaries in the form of a "hierarchical diffusion process" (Bjørnenak, 1997) and the parent organisation exerted budgetary and political pressure to reject the costing system selected by its subsidiary.

In another study, Yazdifar and Tsamenyi (2005) present results of a questionnaire survey that examined whether significant differences exist between the perceptions of CIMA members working in dependent (subsidiaries) and independent organisations in the UK on three main issues: (1) MA practices, (2) factors driving change in MA practices, and (3) the roles of management accountants. The study reports that some differences exist between the two groups in terms of the variables tested and that subsidiary organisations are likely to adopt certain practices due to influences of headquarters. The study conclude "we recognized that other institutional forces are likely to be at play in shaping the perceptions of the management accountants. Head office control is thus only one of the multiple institutional factors. This is a limitation of the paper" (Yazdifar and Tsamenyi, 2005, 196). The study invites further studies on identifying other influential factors on the diffusions of MA practices in group organisations. The next section discusses interrelation between subsidiaries as another influencing factor in driving MA changes in subsidiary organisations.

2.2.2 Interrelationship: Subsidiary-subsidiary or Lateral relationship (network of managers) and diffusion of (MA) innovations

Having explained the 'traditional hierarchical parent-subsidiary relationship' as a source of diffusion of innovations, the recent studies in international management report that relationships between parents and subsidiaries in the global economy are characterised simultaneously by elements of organisational interdependence and local autonomy (Dossi and Patelli, 2010). Consequently, there are many researchers arguing that subsidiaries are not just an 'agent of corporate HQ' or the implementers of assignments from parents, rather act as 'semi-autonomous entities and develop unique capabilities in different local environments (O'Donnell, 2000; Dossi and Patelli, 2010). The studies also highlight the role of the network of intra-subsidiary organisation linkages, which can result in a high degree of interdependence amongst the subsidiary organisations (Phene and Almeida, 2008)¹. Explaining the interdependence in group organisations and MNCs, Gnyawali *et al.* (2009) argue that inter-subsidiary ties involve creation, transfer, and/or exchange of valuable knowledge. Inter-subsidiary ties can be formal or informal, strong or weak, and can result in unidirectional or bidirectional knowledge flow. Motivation of a subsidiary for inter-relationship ties could stem from both proactive and reactive reasons (Gnyawali *et al.*, 2009, p.390) and would result in an isomorphic pull towards similarity between subsidiaries in the group (Westney, 1993).

In the case of group organisations, isomorphism occurs as managers replicate key management practices and techniques (including MA practices) from other subsidiaries within the group, where they have been successful (Kostova, 1999). Such transfers of organisational knowledge and practices and the consequent isomorphism are facilitated by more extensive interactions and communications across the subsidiaries, by the use of informal mechanisms of coordination and by building good relationships between

¹Interdependence has been defined as the state in which the outcomes of a subsidiary of a group organisation influence or are influenced by the actions of another subsidiary within the group operating in a different region or country (see also, Saavedra *et al.*, 1993).

managers (Kostova, 1998; Ghoshal and Westney, 1993). This trend toward isomorphism takes place through the network ties among managers of subsidiaries (Manev, 2003).

The lateral integration or so called managerial network is an important informal coordination mechanism between subsidiaries in group organisations. Through their lateral contacts with other subsidiaries at other locations, subsidiary managers not only learn about successful management practices but, when their subsidiaries share knowledge about the implementation of new (MA) practices and techniques, can also coordinate their actions at the grass-roots level. Hence, the more subsidiary managers interact with each other, or better “connected” (as explained by Bol and Moers, 2010), the more they learn about (MA) techniques and practices adopted and implemented in other subsidiaries within the group.

2.2.3 Subsidiaries capabilities in adopting new techniques and the role of management accountants

Both external (to group) and internal (parent and other subsidiaries) sources of knowledge assimilation and adoption of MAIs for subsidiary organisations may have certain characteristics that differently affect the subsidiary organisations in relation to the changes in their (MA) systems. The subsidiary’s management, structure and culture also play an important role in the adoption of (MA) innovations from different sources. Phene and Almeida (2008) comment that the recognition, absorption and utilization of this knowledge is dependent upon *subsidiary capabilities and knowledge stock*. Birkinshaw and Hood (2000) suggest that the influence of the subsidiary management cannot be overlooked. In another study, they commented that changes to the subsidiary stock of capabilities and its charter are closely tied to the subsidiary’s ability to add value (Birkinshaw and Hood, 1998). The subsidiary’s ability to recognize, assimilate and exploit new external information, also called “absorptive capacity” (Cohen and Levinthal, 1990) or “sourcing capability” (Phene and Almeida, 2008), is critical to the adoption of new knowledge and innovation. However, there may be differences across subsidiaries in how this knowledge is utilized. This is an important potential, which is referred to in the international management literature as “combinative capability” (Phene and Almeida, 2008) which represents creativity in knowledge management and how to fit that into an organisational context. Both *absorptive* and *combinative capabilities* are important in the adoption and implementation of MAIs in subsidiary organisations and this line needs further research.

Concurrent with the development of the MAI literature, researchers have also examined the roles of management accountants in developing ‘sourcing and combinative capabilities’ of organisations in adoption and implementation of such techniques and “the interplay between management accountants and other agents of change” (Berry *et al.*, 2009, p.10). Naranjo-Gil *et al.* (2009) argue that individuals acting as financial officers or senior management accountants may have a significant effect on the adoption of MAIs (see also Byrne and Pierce, 2007; Järvenpää, 2007; Emsley *et al.*, 2006; Burns and Baldvinsdottir, 2005; Emsley, 2005; Pierce and O’Dea, 2003) and that demographic data is predictive of their innovativeness. Emsley (2005) reported that some management accountants displayed a higher level of innovativeness because of their involvement in managerial decision making. Berry *et al.*, (2009, p.10) review the literature and comment: “There is very limited evidence of active involvement by management accountants, in the processes of design, operation, adaptation and abandonment of new organisational forms”. They conclude “Whatever the reason, this gap warrants further research.” However and despite the urge for

examining such roles of management accountants, the extant literature on groups and MNCs lacks studies examining the role of management accountants in the adoption and implementation of MAIs in subsidiary organisations.

From the review of the literature above, organisational networks in summary can be classified into two broad types: external and internal. External networks are formed between a number of organisations whereas internal (including both vertical and lateral) networks are formed between parents-subsidiaries and subsidiaries-subsidiaries. In the present study, we are interested in examining if the “extent of the diffusion of MAIs” in dependent organisations with both internal and external networks is different from those in independent organisations (research question 1), “what are the sources and channels of diffusion of MAIs” in group and MNCs and “how management accountants are involved in such processes” (research question 2). The third research question will be discussed below.

2.3 The notion of success in the implementation of MAIs

Along with the examination of the extent of diffusion of MAIs, the literature shows a growing interest in the implementation of MAIs and that not all adopted MAIs may “successfully” be implemented. However, due to the complexity of defining and evaluating “success” (Schoute, 2000), appraising success in MAIs implementation has proved to be a real challenge for researchers. The literature indicates that “the nature and meaning of success” in MA has been debated and considered from different perspectives (Cinquini and Mitchell, 2005; Shields, 1995). While there might be overlaps between these perspectives, Cinquini and Mitchell (2005)’s review of literature on ABC/M success, suggest seven approaches adopted by researchers to identify and measure success². In a recent study, Ax and Bjørnenak (2007, p.362-3) argue that success can be measured in different ways including the degree to which innovations are adopted and implemented in practice, the number of books, journals, magazines and professional articles devoted to innovations, and the number of people attending conferences, seminars, courses, workshops and training courses on innovations. These studies indicate that success for MAIs is multi-dimensional with a dynamic characteristic where its evaluation requires several factors/aspects from different views (such as producers and users, the type of work of respondents) to be considered. Overall, “there is no generally agreed, set definition of the meaning of success in a MA context” (Cinquini and Mitchell, 2005, p.73).

Among the studies in the literature, Anderson (1995) adopts a different view as she examines the success in the implementation of ABC/M as a staged process. This analysis, it is argued, provides “a more dynamic view of the ABC/M implementation process and of the importance of the timing of the factors implicated in its success” (Cinquini and Mitchell, 2005, p.66). Further work by Anderson and Young (2001) indicated that the direction and level of importance of many factors varied by stage. They conclude that, “studies which do not differentiate implementation stages could, in aggregating results from various stages, distort the real levels of significance of factors potentially associated with ABC/M success” (Cinquini and Mitchell, 2005, p.67).

The present study has addressed this importance and considered the implementation stages of MAIs (four stages developed from the literature for each of

² The seven approaches are: 1. *Success equals participants’ views of it*; 2. *Conditions indicative of ABC/M success*; 3. *Success equals financial benefit*; 4. *Success equals the continuing existence of the ABC/M system*; 5. *Success equals the meeting of objectives*; 6. *Success equals improvement on existing information*; 7. *Success is evidenced by the organisational use of ABC/M*.

the five MAIs examined in this paper – see Table 4 for the details of the stages). Our approach complements prior research, which mainly relies on a subjective interpretation of responses in identifying implementation stages in very broad terms. Furthermore, by presenting the levels of the implementation of MAIs in the survey questionnaire, the limitations are addressed of the studies that fail “to recognize, and/or convey to survey respondents, the different levels at which organizations might adopt [ABC and ABM], together with the use of different activity management terms across prior studies” (Baird *et al.*, 2004, p.385). Previous researchers neither examined the stages of implementation of MAIs in group organisations and MNCs nor compared such implementations with those in independent organisations (Jones, 1985, 1992; Yazdifar and Tsamenyi, 2005). As a result, they failed to examine the effects of ownership type on implementation of MAIs. In addition, the literature is silent of the issue of the effect of vertical and lateral relationships in subsidiary organisations on the stages of implementation of MAIs. The present study addresses this importance by the third research question set in the outset and will be analysed by the data from the survey questionnaire with further insights from the interviews.

3. Research Methods

This paper’s research is based on a mixed-methods approach, involving the administration of a questionnaire and follow-up interviews. The questionnaire was employed for the purpose of gathering “objective facts” and unveiling some realities about MAIs, while the interview was adopted for validating the “objective facts” (Modell, 2015, 2010) and gathering further information. Reviews of empirical research show that questionnaires are commonly used to gather data about the diffusion of MAIs but are rarely combined with complementary research methods, and this is seen as a limitation of prior research. The data for the present study was collected during 2007-2011 from two sources: a survey and face-to-face and telephone interviews with CIMA qualified management accountants. While questionnaires can provide evidence of patterns amongst large populations and have proved to be economical in collecting a large volume of primary data, they have limitations in gathering some significant and more in-depth insights on participants’ attitudes, thoughts and actions (Kendall, 2008; Converse and Presser, 1986). The interviews not only overcame this limitation, but also provided a deeper understanding of the nature of the diffusion of MAIs at different implementation levels and their contexts. Interviews also act as a way of internally validating quantitative data (cf. Cadez and Guilding, 2008). Consequently, “the qualitative inquiries in the same empirical setting” (Modell, 2005, p.236), provided further exploration of variables in the survey questionnaire and the responses to open-ended questions. The combination of quantitative and qualitative information helped to enhance the assessment of this study’s empirical measurements, validated its interpretation of empirical evidence and strengthened the basis for its conclusions (Dossi and Patelli, 2010, p.504).

3.1 Questionnaire Survey

A postal questionnaire survey was used to gather the data, with the aim of the questionnaire being to test the research questions mentioned earlier. The cooperation of three CIMA-qualified members was helpful in this regard. A pilot test was carried out, asking some practitioners and academic colleagues about the questions used in the questionnaire. Subsequent modifications were made to improve the questionnaire’s usability.

The first part of the questionnaire was designed to collect demographic information regarding the respondents (such as age, job title, number of years as a CIMA qualified management accountant and work experience in the current business) and about the business (type of business industry, number of employees, annual turnover, parent company). Table 1 reports the descriptive statistics of some of the above data. The second part of the questionnaire was designed based on a review of the literature and aimed to be straightforward³. It included sections about the levels of adoption and stages of implementation of MAIs, and also an open question for each section about any other factors specific to their organisation that they felt would influence the take up and implementation of MAIs. The section on the adoption of MAIs provided five choices⁴ for respondents, ranging from “discussions have *not* taken place regarding the introduction of the innovations” to their “implementation” (the responses to the latter option is summarised in Table 2). The respondents who had marked the choice of adoption of MAIs in the above section were then asked to indicate the stage of their implementations, as set out in the questionnaire, and included four stages for each innovation. Table 4 shows the details of these stages for each of the five MAIs discussed in this study.

The questionnaire was mailed to 2041 qualified members of CIMA who were working in the managerial accounting sections of organisations in Australia, New Zealand and the UK in 2007 (1,175 in Australia, 366 in New Zealand and 500 in the UK). The head office of CIMA in the UK provided the authors with a list of names and addresses of qualified members in the above three countries. Following this provision of names, a general announcement about this questionnaire survey was made on the CIMA website. Three weeks later, an online questionnaire was also made available, encouraging those who had received copies of the questionnaire, but who had not had a chance to complete it, to respond.

There were 584⁵ useable responses (both hard copies and online replies) from the three countries. These included 310 completed questionnaires, plus 88 not-completed or not delivered, for Australia; 142 completed questionnaires, plus 10 not-completed or not delivered, for New Zealand; and 132 completed questionnaires, plus 45 not-completed or not delivered, for the UK. Eventually, the survey ended up with satisfactory response rates of 28.5%, 39.5% and 29% from Australia, New Zealand and the UK respectively. Krumwiede (1998) agrees that the normal response rate for such surveys must be approximately 20%, although there are many published surveys with lower response rates.

To test for non-response bias, the responses were split into two groups. Those received back first were labelled ‘early respondents’ and the other were labelled ‘late respondents’. *Simple* t-tests did not reveal any significant differences (at $p=0.05$) between early and late respondents for demographics or mean item scores (such as the total number of CIMA members working in manufacturing and non-manufacturing organisations, their average ages and number of years as qualified members).

³ The questionnaire included various sections to serve as analysis for different academic discussions.

⁴ The five choices offered in the questionnaire were: “Discussions have *not* taken place regarding the introduction of this practice”; “A decision has been taken *not* to introduce this practice”; “Some consideration is being given to the introduction of this practice”; “This practice has been introduced on a trial basis”; and, “This practice has been implemented and accepted”.

⁵ The average age of respondents was 47 years, with an average time of employment in their current position of slightly over 5 years and in their organisation for over 10 years. Average SBU size was 336 employees. 98 percent of respondents were male and the remaining 2 percent female.

3.2 Interviews

As mentioned earlier, the interviews were aimed at eliminating some of the uncertainties, validating responses and examining answers to open-ended questions in detail, as well as gathering additional qualitative interpretations. The respondents were the CIMA qualified management accountants who had expressed interest in participating in an interview by checking the box provided on the cover page of the questionnaire and who had provided the researchers with their contact details. Consequently, 56 interviews were conducted with CIMA members working in subsidiary organisations: 34 in Australia, 13 in New Zealand and 9 in the UK (face-to-face and over the phone). These took place between 2008 and 2011.

The interviewees were working in different organisations and industry sectors (including business services, insurance, food and beverages, IT, finance, apparel, engineering, oil and mining, construction, consumer products, healthcare, education, aerospace, automotive, media, chemical, design) and, consequently, represented 56 subsidiary organisations. The demographic information of the interviewees that was gathered, and also briefly noted below, reveals that they were experienced and knowledgeable about the MA techniques discussed in the literature, those studied in this research and, particularly, those adopted and implemented in their organisations.

The average interviewee is 44 years of age, has been working for their current employer for almost nine years, and has held their position for a little more than 5 years. In addition, 34 (61%) respondents are working as financial directors/managers and 22 (39%) as senior management accountants. The comments received from respondents to the open-ended questions drew our attention to important, but unexplored, issues in the MA literature, i.e., the sources of innovation diffusion in groups and MNCs that resulted from an inter-subsidiary relationship. Consequently, our interview questions were adjusted to include such issues as well. In this way, it was ensured that the essential issues were systematically covered during the interviews. Moreover, although the semi-structured questions were set, the interviews took a flexible form, along with follow-up questions aimed at clarifying some of the practices (Sewell and Rossman, 1995). All but six of the interviews lasted between 1 and 2 hours. For validation purposes, these were also followed-up by some telephone calls and emails to clarify some issues that subsequently emerged. Apart from three, all the interviews were tape recorded with the permission of the interviewees, and then transcribed. Finally, confidentiality was assured both externally and internally.

4. Findings and Discussion

The starting point will be a glimpse at the context of the survey sample. As Table 1 shows, 27.2% of the respondents to the survey were from subsidiary organisations and 72.8% were from independent organisations. Compared with the UK and New Zealand, there is a higher number of subsidiary companies in the sample from Australia. However, the number of dependent companies that participated in this study was lower than the number of independent companies from all three countries. The table also shows that 63.7% of these companies are in the service sector, and 36.3% are in the manufacturing sector. Finally, the summary shows that, in terms of number of employees as an indicator of company size, 25% of the organisations in the survey are small businesses, and the rest are medium and large. Clearly, the impact of industry types and size of organisations on the diffusion of MAIs is important (see for example Askarany *et al.* 2010 for the impact of size). Whilst, these factors warrant future studies, the focus of the present research is to examine the impact of ownership types on the

diffusion and implementation of MAIs. The contextual characteristics discussed above will provide a useful background for our analysis, to which we now turn.

Insert Table 1 here

4.1 The extent of the diffusion of MAIs in dependent and independent companies

The first research question was to examine where there is a difference in the extent of diffusion of MAIs between dependent and independent organisations. This was addressed by the findings of the questionnaire. Table 2 summarises the responses to the adoption of MAIs in both types of organisations. The responses show that the adoption rates (in percentage terms) of all five MAIs (i.e., ABC, ABM, BSC, benchmarking and TC) in dependent organisations are higher than in independent ones. However, the Chi-Square tests indicate that there is a significant association between the ownership types (dependent vs. independent) and the adoption of BSC and benchmarking (but not for ABC, ABM and TC). Even though the impact of ownership on their diffusion cannot be statistically generalised for all five MAIs tested in the current study, Yazdifar and Tsamenyi (2005) find that the reported importance of ABC and BSC in the 1990s was not significantly different between dependent and independent organizations but was marginally significantly higher for dependent organizations when respondents were asked about the importance of ABC, BSC and TC in the future. They argue that management accountants in subsidiaries consider ‘organisational restructuring’, ‘new management style’ and ‘globalization’ as the main drivers for adopting such techniques. The present survey indicates that, eight years later, the dependent organisations present a higher take-up rate for all five MAIs tested in the study. This indication raises the question of which factors have contributed to this higher take-up of the new MAIs in group organisations? The interviews were used to further our insights of this finding which is from research question 1 and also to discuss research question 2 which is to know sources of diffusion of MAIs in subsidiary organisations and the role of management accountants in such processes.

Insert Table 2 here

The majority of interviewees responded to the question of which factors have contributed to the higher take-up of the new MAIs in group organisations. They emphasised that changes in the market, technology, competition and customer focus were the most influential factors for this development. They also highlighted that an increase in “inter-subsidary relationships” and “knowledge transfer between units” has become a factor. While this conforms to what Hatch and Dyer (2004) and Bol and Moers (2010) argued, the interviewees did not undermine the role of parent organisations in affecting changes in the MA practices of subsidiaries. Nevertheless, as the respondents emphasised, these relational factors were emerging and became much more influential from the 2000s. An interviewee said: *“We have gained valuable knowledge and expertise from other subsidiaries”. “This is kind of practical learning before doing.”* Interviewees also commented: *“We do not compete against each other [rather] now see the success in collaborative actions between us and other peer subsidiaries and also learning from each other”, “If we manage our relationship with them, they [other subsidiaries] are willing to share their knowledge with us, in this fierce market”, “They discuss how they have progressed with it, the difficulties experienced, and how these could be avoided”.* These views emerged as a common

theme. They also added: *“We explain our situation with them and then a discussion on how to progress”*. Also, *“It is not difficult to call them [other subsidiaries] and ask about their experience of certain things and seek advice. Can I do this with other [non-group] organisations?”*, *“They are kind of model for us”* who *“we can approach them easily to learn”*, *“to know what they have done”*, also *“to discuss how to alter the programme”* to fit our unit.

We gathered similar comments suggesting a trend of subsidiary organisations gaining a deeper understanding of the new techniques prior to any adoption and implementation. This was the case in the adoption and implementation of MAIs, where subsidiaries *themselves* were stimulated to adopt these new techniques within the group, but without their parent organisations’ involvement. An interviewee outlined, *“You cannot believe how our managers felt confident about their knowledge of BSC before the new practice was launched in our subsidiary”*. Other interviewees commented: *“It seems that we had read all the relevant textbooks and case studies; we knew all the existing knowledge and just needed to deal with any new issues that may relate to our company case”*. *“This is how we learn before doing”* and it *“addresses our questions, concerns and importantly, removes uncertainty, which is inevitable in any change programme”*. *“This is all about sharing experiences between units, rather than repeating them”*. However, *“this requires careful management of our relationships”*. A common theme that emerged in the interviews was that the ‘intra-group’ and ‘inter-unit’ connections are main sources of knowledge sharing in relation to the diffusion of MAIs.

How did these connections and subsequent knowledge sharing materialise? The interviews with 56 accountants in subsidiary organisations revealed something novel to the literature on MAIs. They pointed to four types (or sources and channels) of diffusion of MAIs in group organisations (see details in Table 3), which were not discussed in the literature but are related to the diffusion of MAIs in group organisations. One of these four types stem from the ‘group-wide decision’, where the MAIs are selected by parent organisations and subsidiaries are asked to follow that group-wide decision. A second type is the one first adopted by another subsidiary within the group, and then taken up by other subsidiaries. A third type develops from a joint decision: two or more subsidiaries jointly decide to take up an MAI. The fourth type was where an MAI was chosen by the subsidiary itself, without any involvement of parent and/or other subsidiaries⁶, but this MAI would consequently become a subsequent choice for other subsidiaries.

4.2 Sources of the diffusion of MAIs in subsidiaries – Parent companies as a facilitator of MAIs diffusions

For the purpose of second research question, the investigation into the sources of the diffusion of MAIs continued by asking the 56 interviewees in subsidiary organisations whether those MAIs adopted in their organisations were initiated by their parent organisation, learnt from other subsidiaries, jointly adopted by other subsidiaries or, finally, adopted by the subsidiary organisation without the involvement of the parent organisation and/or other subsidiaries. The results are summarised in Table 3.

Insert Table 3 here

⁶ Here, it should be noted that even though these four sources of diffusion and adoptions of MAIs in subsidiary companies are presented as separate methods, in practice, they would be joint effects on the adoption and implementation of innovations in a subsidiary.

As Table 3 reveals, most of the changes in subsidiary organisations (54%) are launched by parent organisations, 24% are diffused by other subsidiaries, 9% are jointly taken up by two or more subsidiaries and 13% of the adoptions of MAIs in subsidiary organisations are initiated by a subsidiary without the involvement of the parent organisation and/or other subsidiaries. The extant literature has mainly studied the diffusions of innovation in group organisations through the first and fourth methods listed above (e.g., Dossi and Patelli, 2008; Al Chen *et al.* 1997), but the second and third ones, which are the diffusion of innovation when an innovation is jointly adopted by two or more subsidiaries or when a subsidiary adopts an innovation after it has been adopted by another subsidiary, have not been previously discussed (Bol and Moers, 2010; Van Der Stede, 2003). There might be several motivations for these types of diffusion of innovations within group organisations; we were able to examine three of them as discussed by the interviewees. The interviewees commented that in the case of joint adoption of MAIs or when a subsidiary follows another subsidiary in adopting an innovation, the subsidiaries could ‘share their knowledge about the innovations and the implementation process’. This not only would reduce costs, but would also lead to increased knowledge about the innovation implementation, which would result in a ‘reduction in the uncertainty’ (Bol and Moers, 2010) that exists in change programmes. Finally, the interviewees also discussed how in the case of joint adoption of an innovation, the subsidiaries were in a stronger position to defend/legitimise the decision of adopting new techniques and to challenge a possible disagreement expressed by the parent organisation. In other words, the joint adoption was also a tactic to challenge the institutional pressures of parent companies⁷.

Overall, the findings indicate that almost 87% (53.7% + 24.1% + 9.2%) of the adoption of MAIs in subsidiary organisations has been due to ‘inter- and intra-corporation network’, i.e., the involvement of either the parent company or other subsidiary organisations. Indeed, it seems that the subsidiary organisations are operating in a different business and economic environment, “differentiated networks” as called by Dossi and Patelli (2010), where the take up of innovations by themselves is much lower than in independent organisations. The take up of MAIs by subsidiary organisations through external group sources, i.e., without the involvement of other subsidiaries and parent organisations, forms only 13% of the changes in their organisations in comparison to independent organisations. This finding suggests that the subsidiary organisations may leave to parent organisations the decision to make changes to their (MA) systems and/or to follow other subsidiaries, and consequently internal group relationships forms the major sources of MAIs for subsidiary organisations where they can receive relevant information about MAIs and how to implement them by following peer subsidiary organisations and discussing the process with them.

In another part of the study, all the interviewees were asked about their understanding of the adopted MAIs in their subsidiaries, how they work, their advantages, outcomes, difficulties, and limitations. In response, the interviewees were more supportive of those changes that were initiated by themselves and equally supportive of those MAIs jointly adopted with other subsidiaries or learnt from them. Two interviewees in dependent organisations commented, “*We feel it is easier to learn from a colleague in another subsidiary than from a boss in the parent organisation. It*

⁷ The subsidiaries challenge parent companies’ institutional pressure by demonstrating the rationality of their decision as it is decided by other subsidiaries as well. The tactic of the joint adoption of innovation to response to institutional pressures, such as those imposed by parent companies, is one of the strategic responses to institutional pressures discussed by Oliver (1991, p.152).

gives more confidence when working with a colleague from another subsidiary. We sometimes get partial solutions from people at headquarters, but much more and practical comments from colleagues even in another subsidiary". "HQ mainly sets the plan and then asks for the results, but without 'sufficient guidance' on how to implement the plan and achieve the results". So, they had a better understanding of the new MA techniques when the subsidiary adopted them by itself or through another subsidiary (where it could get some support), but without the parent's involvement: "There is a 'must' with the parent's decisions which obstructs smooth learning", an interviewee affirmed. In the case of adopting an MAI without the involvement of the parent, the subsidiaries' understanding of the new techniques mostly took place before and during the implementation process. "Learning before doing", was a comment by an interviewee. However, this was not the case of those adopted MAIs that had been initiated by parent organisations where the learning about some aspects of the new systems was sometimes postponed until post implementation. "This happens as the adopted approach is hierarchical", an interviewee in a dependent organisation affirmed. Other comments were "The HQ dictates its decision and sometimes does not understand the difficulties that we face". "The time schedule set by them [HQ] is somehow unrealistic". "They don't see our ground". So, with these, one should expect a more successful implementation of the MAIs initiated by subsidiary organisations than those enforced by parent organisations. This will be discussed in section 4.3 which follows the discussion of the role of management accountants in the change processes.

Management accountants' involvement

When subsidiaries initiates such MAIs, one obvious question was whether management accountants play a role. These issues were discussed with management accountants in dependent organisations. Surprisingly, the interviews suggested that they play a minimal role in the process of adopting MAIs in their organisations. Hence, they did not contribute to the 'absorptive capacity' of their organisation. They showed that top management and managers of operating departments, rather than financial experts, were more supportive in adopting new techniques, including MAIs. The accountants claimed that other managers display a better understanding of the application and benefits of the new MA techniques than the accountants do. The accountants also discussed that other managers show more willingness to take the risk of supporting new systems than accountants do. The common theme in the comments by interviewees' was that *the accountants' knowledge, gained during academic and professional education (e.g., CIMA), is mainly at a theoretical level with less knowledge of how to implement and apply the new techniques* (Burns *et al.*, 2004). One interviewee said: *"We need more practical knowledge that gives us confidence on how to act" and "how to work in a team."* Similar comments from other interviewees: *"Everyone knows that these techniques are superior to traditional ones, but how should ABC be implemented? How can we simplify its use?", "How to deal with difficulties?", "These are not taught at universities or during other training programmes, such as the CIMA qualifications that we possess now."* *"The production manager knows much less than us about accounting and MA. However, he is very confident on what he knows about say target costing and easily can apply that"*. The interviewees commented that the interest of non-accountant management leads to better adoption and implementation of MAIs.

The interviews also suggest that the accountants expected other organisational members to take the first step in advocating the adoption of MAIs. An interviewee stated: *"To be honest, it seems that others [non-accountant managers] know these*

techniques [MAIs] better than we do.” Another commented: “The marketing manager discussed ABC in a meeting, and I was surprised how he could see and nicely explain the application of the technique for our business.” Another interviewee stated: “We are still talking about budgets and variances while other managers are more advanced in knowing about the changes in the market, business, economy and what techniques and systems we need to respond to the changes.” “They have a better assessment of the situation, what we need and what the outcomes of the adoption of a MA technique will be.” The accountants kept quiet, as they were worried that they ‘would be blamed if things went wrong’. An interviewee asked: “Have we ever seen any major changes initiated by a management accountant?”

Overall, the accountants interviewed in subsidiary organisations were not what Coad (1996) called “strategic management accountants.” To undertake strategic management accounting (SMA) projects, Coad (1996) urges that management accountants need to work “smart and hard”. He defines “smart work” as the manifestation of a tendency to select clever and ingenious approaches and techniques (such as those MAIs discussed earlier) to deal with a given task, and then to modify those approaches intelligently and resourcefully when needed. Hard work is regarded as the use of effort to perform and complete the task. Thus, and as discussed in detail by Coad, smart work and hard work are not mutually exclusive. Coad then discusses both learning and performance orientations and argues that the strategic management accountant requires a ‘learning orientation’. This is because learning motivates both smart and hard work, whereas a ‘performance orientation’ motivates only hard work and is not sufficient to undertake SMA projects. He hypothesises that, in addition to undertaking smart work, the effective strategic management accountant requires high levels of communication skills and the ability to empathise with others both within and outside the organisation (cf. Langfield-Smith, 2008). However, most of the interviewees did not claim that they were working smartly and hard, as discussed above. They discussed the importance of the above roles but added that they did not perform that way. The accountants in the subsidiaries had established contacts with other subsidiary organisations to proceed with the implementation of MAIs. However, the original idea of adopting an MAI and how to proceed with it had come from other departments, and not from the accounting department, in all of the interviewed organisations. This observation may bring reluctant agreement with Cooper's (1996) assessment of the inability of accountants to rise to the challenge of SMA (see also Langfield-Smith, 2008). What can be seen here is that claims that management accountants occupy internal consulting roles (Balvinsdottir *et al.*, 2009), act as hybrid accountants (Miller *et al.*, 2008) or become strategic partners (Chenhall, 2008) cannot be tenable.

4.3 Progress in the (stages of) implementation of MAIs

As stated earlier, although the notion of “success” has a far from incontestable definition, in this study, by “successful implementation” we mean higher stages of implementation of MAIs as indicated in the questionnaire survey (stages one to four) and summarised in Table 4. With regard to the implementations of MAIs in the two types of organisations which was the purpose of our third research question, the comparison has been made simplified by comparing the aggregated responses to the first two levels of each innovation (as indicators of lower levels of implementation) to the aggregated responses to the last two levels (as indicators of higher levels of implementation) to examine the overall level of implementation of MAIs in dependent and independent organisations. It is notable that none of the respondent commented that

they aimed to implement the innovations partially and therefore implementation of all four stages was considered by them⁸. The analysis in Table 4 reveals that subsidiary organisations are further advanced in the implementation of ABC and BSC, while the independent organisations present a higher level of implementation of ABM, benchmarking and TC. The table compares the implementation levels of MAIs in independent organisations with both ‘all dependent organisations replied to the questionnaire’ and ‘those 56 subsidiaries participated in the interviews’. The Chi-Square tests indicate that there is a significant association between the ownership types (independent and dependent) and the levels of implementation of all five MAIs tested in this study. This observation is important when we relate the levels of implementation with the channels of MAI diffusions in subsidiary organisations in Table 3. The comparison shows that the independent organisations are more advanced in the implementation of those MAIs (i.e., ABC and BSC) which were initiated by them rather than the parent companies, meaning that the levels of implementation of MAIs relate to the logic of adoption in subsidiary organisations. This will be further discussed below.

Insert Table 4 here

4.3.1 Parent companies’ influences vs. other sources on implementation of MAIs

Table 3 summarised the sources of diffusion of 108 MAIs in 56 dependent organisations which we interviewed. A further analysis of the four sources of these MAIs in group organisations and the stages of their implementation are summarised in Table 4. The Chi-square test in Table 5 indicates a significant association between sources of adoption of four MAIs, namely ABC, ABM, benchmarking and TC (but not BSC) and their levels of implementation in subsidiaries. This indicates that the level of implementation of four of the MAIs in dependent organisations is positively associated with the sources of their adoption. In other words, for four of the MAIs examined in this study (except BSC), the greater the involvement of the subsidiaries in the adoption process (i.e., ABC is adopted more via other sources than via parent companies), the higher the level of its implementation in subsidiaries. In contrast, the less that subsidiaries were involved in the adoption process (i.e., ABM, benchmarking and TC, which are decided by parent companies), the lower the implementation levels. Thus, the findings show that the implementation practices of four MAIs in dependent organisations are related to motivation and to the rationale of subsequent implementation activities (Kennedy and Fiss, 2009). In other words, the findings suggest that a greater involvement by subsidiaries in the adoption process would be expected to result in higher stages of implementation of MAIs. This coincides with Dossi and Patelli’s (2008) study on the use of performance measurement systems in subsidiary organisations. This also corresponds with well-established budgeting research, which theorises that participation boosts motivation (e.g., Dossi and Patelli, 2008; Brownell and McInnes, 1986) and reduces cognitive dissonance (e.g., Foran and DeCoster, 1974). What can be inferred here is that subsidiaries’ real participation in the adoption of MAIs can facilitate better decisions as such participation liberalises

⁸ It might be argued that some firms may not decide to implement all four levels of the stages indicated for each of five innovations indicated in the questionnaire. Consequently, some companies may consider their MAIs to be fully and successfully implemented without reaching level four as this has not been their target. Though, this might be true in practice, none of the interviewees raised this in the interviews and we also paid attention to such issue and did not get such comment on this in the open questions in sections 1.1, 2.1 and 6 of the questionnaire.

decision initiation and, in turn, minimises implementation dysfunction. In other words, hierarchically imposed MAIs are associated with a lower level of implementation, whereas participative adaptations are associated with a higher level of implementation (Dossi and Patelli, 2008).

Insert Table 5 here

4.3.2 Subsidiaries' stock of knowledge, geographical location and adoption / implementation of MAIs

It has now been established that there exists two sets of sources for the adoption of MAIs and assimilating knowledge: the external (non-group) environment and the internal group environment, which includes both the parent company and other subsidiaries. Of the subsidiaries we studied, 53.7% had taken up the adoption of their MAIs from the parent company, 34.3% (24.1% + 9.2%) from or with other subsidiaries and 13% directly (i.e., without the involvement of parent or other subsidiary organisations) from the external environment.

A common theme that emerged from our interviews was that those subsidiaries that had already given some (practical⁹) thought to the MAIs such as introducing them on a trial basis or had already adopted them, were more prepared to and capable of adopting and implementing other MAIs. The interviewees in the subsidiary organisations that had adopted one or more MAIs in the past discussed the possibility of adopting other techniques. This comment was based on their understanding of the views of other managers in their organisations. *"They [managers] believe that when we have experienced one major change, the next one would be easier."* and, *"The experience of change is the key"*. *"It is important to be somehow confident that you can manage difficulties that you may face in a new project implementation since you have experienced such cases in the past"*. A similar theme was also observed from the analysis of the survey results. For example, most of those subsidiary organisations that had either introduced ABC on a trial basis, or had adopted and implemented it, had also adopted one or more other MAIs in the following percentages: 56% ABM, 66% BSC, 80% benchmarking and 44% TC. So, it can be argued that their technical expertise and insights resulting from the earlier thinking about and adoption of certain innovations (stock of knowledge) and their openness to change have provided the subsidiary organisations with the (absorptive) capability to recognise the knowledge and techniques available within or outside the group and identify potential sources of assistance, e.g., other subsidiaries within the group. Thus, the knowledge stock of the subsidiary can be expected to act as an important factor in the adoption and implementation of new techniques including MAIs¹⁰.

This would lead to a subsequent transfer of knowledge about MAIs between subsidiaries and between the parent company and subsidiaries if the subsidiaries were located near each other which may form a stronger "organisational unit's social

⁹ By 'practical thought', we refer here to the case where the subsidiaries had already adopted and implemented an MAI or adopted them on a trial basis in real organizational life and not at theoretical level (which is limited to the discussion of the methods, their advantages and limitations) which is commonly taught at universities or other teaching institutions (e.g., CIMA).

¹⁰ Of course, the mere recognition of the availability of external knowledge (both outside and within the group) does not necessarily permit a subsidiary firm to absorb it. The subsidiary must also develop linkages to sources of knowledge (other subsidiaries) that act as conduits for knowledge transfer (Dyer and Nobeoka, 2000; Gulati *et al.*, 2000).

network” (Bol and Moers, 2010, p.723). The geographic proximity between the subsidiary organisations was noticed in several of the MAIs’ knowledge exchanges between subsidiaries in the interviewed organisations, and it was discussed by the interviewees. Company visits and meetings, frequent phone calls, mails to send forms and sample reports facilitated knowledge transfer and the knowledge-building process between subsidiaries. Therefore, it can be argued that parents and subsidiary organisations may need to establish intra-organisational mechanisms, processes, and systems to develop “better connected” “social network” (Bol and Moers, 2010) that link various subsidiaries across time (Hansen, 1999; Almeida *et al.*, 1998). There were also four cases in the interviewed subsidiaries where the subsidiaries faced significant difficulties in the implementations of MAIs, which the interviewees believed partly arose due to lack of proper communication arising from the geographical distance between the subsidiary and HQ or other subsidiaries, making effective assimilation difficult. Phene and Almeida (2008, p.911), regarding the innovations in MNCs, suggest: “Geographic proximity appears to be more important than organisational context or identity, permitting more effective knowledge assimilation for innovation”, and our evidence lends weight to this.

5. Conclusions

This paper has been an attempt to examine how MAIs are diffused in subsidiary organisations. Three interrelated questions have been posed: (1) Is the extent of the diffusion of MAIs in dependent (subsidiary) organisations different from such diffusions in independent organisations? (2) Does the extent of such diffusions in dependent organisations occur through vertical relationships (i.e. through parental involvement), through multiple lateral relationships or through the help of in-house management accountants? (3) Are such diffusions implemented more successfully in dependent organisations (having both internal and external group networks) or in independent and non-group organisations? There has been an attempt to answer these questions through an analysis of both quantitative and qualitative data collected from a survey of 584 responses by the members of CIMA working in dependent and independent organisations to a questionnaire, and from follow-up interviews with 56 respondents in dependent organisations. The belief is that this is a pioneering effort in that it is the first to examine different sources and channels of the diffusion of MAIs in group organisations and subsidiaries. As will be seen below, the findings will have theoretical implications for research into diffusion of MAIs, in particular, and diffusion theory, in general.

Concerning the first research question, the study offers a detailed picture of the diffusion of MAIs in group organisations and suggests that the diffusion of MAIs in subsidiaries is different from that in independent organisations. The results of the survey indicate that the adoption rates (in terms of percentage) and take up of all five MAIs (i.e., ABC, ABM, BSC, benchmarking and TC) in dependent organisations is higher than in independent ones. However, the Chi-Square tests only indicate that there is a significant association between the ownership types (dependent vs. independent) and adoptions of BSC and benchmarking (but not with ABC, ABM and TC). Though the impact of ownership on the diffusions of MAIs cannot be statistically generalised for all five MAIs examined in this study, the higher take up of MAIs by dependent organisations observed in this study is in line with the study conducted earlier by Yazdifar and Tsamenyi (2005). Hence, for the diffusion and adoption of MAIs, ownership types matter. Given the few studies in this field, this requires further research.

For a subsidiary organisation, there are two environments, one being external to the group and the other being the environment formed by the group and other subsidiaries within the group. The subsidiary can adopt MAIs from both sources, but with different orientations. The study provides interesting results regarding the question of which sources of external knowledge (external environment, group and other subsidiaries) are playing a role in the diffusion of MAIs in group organisations. In particular, the study provides evidence that there can be four sources driving innovations in subsidiaries: parent, peer, joint and individual. Interestingly, two of these sources (i.e., peer and joint) are related to the inter-subsidary relationship or so-called *lateral relationship* which is new to the literature on the diffusion of MAIs. Hence, the creation, diffusion and adoption of new ideas cannot always be a “top-down” process (of institutionalisation). Rather, as Friedland and Alford (1991) and Sewell (1992) observed, institutional arrangements are often vague and “non-monolithic”, allowing alternative logic to generate divergent models of behaviour. This seems to be an emerging logic in the institutional field of MAIs, and this area needs further research.

Addressing the second research question, the study shows that, although 53.7% of the MAIs are adopted and diffused in group organisations by parent organisations, the inter-subsidary relationship also plays an important role as it forms 33.3% (24.1% + 9.2%) of diffusions of the MAIs in group organisations. The subsidiaries show less interest (only 13%) in adopting MAIs without the involvement of their parent organisation or other subsidiaries. Therefore, despite the claim that subsidiaries act as “appendages” of parent organisations (Bartlett and Ghoshal, 1991; Stopford and Wells, 1972) or “miniature replica” subsidiaries (White and Poynter, 1984), the present study claims that the interdependence of subsidiaries has a substantive impact on the adoption and implementation of MAIs in subsidiaries. The findings suggest that the subsidiary is part of a network – not just a dyadic relationship with a parent company. The literature on MA change lacks data on this particular scenario. With these findings, it is clear that the dynamic relationships between subsidiaries can produce considerable diffusion-effects within subsidiaries. This dynamic relationship in transferring knowledge (and consequent reduction in uncertainty) between entities of group organisations and MNCs in the diffusion of MAIs requires further studies.

Despite the influence of the parent organisations, this study also highlights the role of subsidiaries’ capabilities in adopting and assimilating MAIs. *Absorptive capacity* or *sourcing capability* (subsidiaries’ ability to recognise, assimilate and exploit new techniques, such as MAIs) and *combinative capability* (i.e., creativity in knowledge management and how to fit that into an organisational context) are critical to the adoption and implementation of MAIs. The paper supports the idea that the absorptive capacity of a subsidiary is related to its prior knowledge stock and permits the recognition and absorption of knowledge including MAIs. The study indicates that those subsidiaries that had already adopted any MAIs were more prepared to and capable of adopting and implementing other MAIs. Thus, the knowledge stock of the subsidiary can be expected to act as an important factor in the adoption and implementation of new techniques, including MAIs. However, this stock of knowledge and the subsidiary’s capabilities in adopting MAIs are, to some extent, distinct from the capabilities of its parent companies and sister subsidiaries. The particular geographical setting and history of the subsidiary are important in defining “a development path that is absolutely unique to that subsidiary, which, in turn, results in a profile of capabilities that is unique” (Teece *et al.*, 1997, cited in Birkinshaw and Hood, 1998, p.781). Since Cohen and Lenenthal (1989) first introduced the idea of absorptive capacity, the concept has been widely cited, but it has not been discussed in the MA literature. We consider

this paper as a starting point to discuss this and invite further case studies in this area. In future studies, we hope to identify the actual mechanism and processes underlying absorptive capacity and knowledge assimilation to determine and measure their role in the diffusion of MAIs in group organisations.

Moreover, the study found that the geographical proximity of parent and subsidiary organisations plays a role in the diffusion and implementation of MAIs; also, the distance may contribute to a subsidiary not being able to utilize knowledge from group and other subsidiaries. This is an area that has not been discussed in the extant literature on the diffusion of MAIs in group organisations. With an efficient communication structure in place in group organisations, different subsidiaries will be more able to seek out, collect and disseminate information (Bol and Moers, 2010; Tushman, 1977). This in turn increases the chance of adopting MAIs through interaction within the group. A well-developed internal communication infrastructure in group organisations may outweigh the geographical issue and facilitate the dispersion of ideas about the adoption and implementation of MAIs and improve the visibility of the new techniques. This finding adds to the existing literature by discussing the idea that the diffusion of MAIs in group organisations and MNCs should be considered in conjunction with other (contingency) variables such as organisational environment and structure. This in particular contributes to the “research on roles of MA practices in organizations with team-based structures”.

An exploration was carried out into how management accountants enrich intra-organisational relations and enhance organisational capabilities in the process of adoption and implementation of MAIs. The study revealed that management accountants in subsidiary organisations are not involved in the major changes in MA practices such as the adoption of MAIs. The interviews reveal that they are not sufficiently “strategic management accountants” to be able to undertake SMA projects. Frequently, the accountants did not show any interest in initiating change programmes and tended to concentrate on their independent ‘watchdog’ role, focusing on ‘preventing things from happening’ (Johnston *et al.*, 2002, p.1331) rather than being effective strategic management accountants, as discussed by Coad (1996). This might be due to the type of training provided to them during the studying and training for their academic and/or professional qualifications. Indeed, one may question the reason for the minimal attempt by the qualified accountants in subsidiary organisations to initiate changes in MA systems. This leaves us with serious questions: What knowledge and skills does an accountant need to be a “strategic management accountant”? What are the current and future needs of accountants that universities and other training centres should seriously consider?

With regard to the third research question, our study revealed that the stages of implementations of MAIs adopted by subsidiary organisations may be higher if these are initiated by the subsidiary organisations themselves rather than forced by parent organisations. The study reports a higher stage of implementations of ABC and BSC in subsidiary organisations where there were higher adoption rates of these techniques via other sources than those forced by parent organisations. However, in comparison to independent organisations, the subsidiary organisations in this study show a lower stage of implementation of ABM, benchmarking and TC where the adoption of these techniques had mostly been decided by parent organisations. It can be argued that the subsidiary organisations will take ownership of the new techniques if they believe that they are their own systems rather than the group organisations’ systems imposed on the subsidiary (Dossi and Patelli, 2008). So, the practice of implementation of MAIs in group organisations is probably related to adoption methods and motivation (amongst

other possible factors and attributes / characteristics of innovations and adopters). The improved interaction between the group and subsidiary organisations may positively affect motivation and remove potential barriers and in particular uncertainty (Bol and Moers, 2010). Since the successful implementation of an organisational change such as the implementation of MAIs is quite difficult, we believe it is necessary to examine both motivation and outcomes to fully understand the partial implementation processes in group organisations and MNCs.

The findings mark theoretical implications as well. On the one hand, the findings challenge the rational perspective which holds the view that adopters are rational and make technically efficient independent choices and that the social and organisational contexts in which such adoptions take place are taken for granted. In particular, the agency theory percept that the agent-principal relations between headquarters and subsidiaries can prompt forceful adoption has reservations. On the other hand, the findings support the view that MAIs take place in dynamic and complex inter-organisational relationships (i.e. between adopting organisations and enforcing organisations), in intra-organisational relations between subsidiaries, and in their enabling mechanisms including managerial knowledge and capabilities. The effects of isomorphism, fads and fashions would be valid for these relationships rather than in the global arena of diffusion. Future studies should also examine subsidiary knowledge outflows, both horizontal and vertical, as compared to inflows (see also Michailova and Mustaffa, 2012).

The results of this study suggest that organisational structure is relevant to consider in efforts to increase the knowledge about how and why MAIs are diffused, adopted and implemented. The study suggests that knowledge flows are a key source of advantage for group and MNCs in adoption of MAIs; however, the nuances of knowledge flow practices and their micro-foundations (individual levels) require further theoretical development. In this regard, the role of managers at various organisational levels should be examined. Furthermore, it is interesting to examine to what extent MAIs are adopted through *deliberate knowledge flows* or as an *emergent strategy* in a subsidiary organisation and how these affect the levels of implementation of MAIs. Deliberate knowledge flows denote an intentional, top management-driven strategic effort to manage the pattern of competence impacting knowledge exchanges. It refers to the leverage of ‘superior’ competences which are usually generated by parent companies or advanced subsidiaries with creative roles (Meyer et al., 2011). Whilst, knowledge can also be exchanged, reused and leveraged in subsidiary organisations of a MNCs in more emergent ways and to respond to non-routine problems (Tippmann *et al.*, 2013).

The study assessed the success of MAIs according to their stages of implementation as set in the questionnaire. Though this measure provides more dynamic process of implementation and it has its merit, it is proxy and partial. This measure, similar to many other measures at best, “can indicate a likelihood of success but does not provide any guarantee of it” (Cinquini and Mitchell, 2005, p.74). Also, the interviews in this study were with CIMA qualified accountants working in subsidiary organisations. It is believed that the interviews with accountants in independent organisations would also shed light on the issues discussed above. In this study, we have focused our investigation on a limited number of MAIs (ABC, ABM, BSC, benchmarking and TC). While these innovations were intended to serve as indicators of a broader construct, overlooked idiosyncrasies might render them less appropriate as proxies for the adoption of MAIs in general (Naranjo-Gil *et al.*, 2009; Chenhall and Langfield-Smith, 1998a,b). In addition, this study was conducted in three countries,

namely, the UK, Australia and New Zealand, in different industry sectors and organisations with various sizes. The analysis was based on the overall responses to the questionnaires and interviews; therefore, the specific features of each country on the adoption of MAIs in the studied organisations, the type of industry sectors and company size have not been discussed or analysed. These require further study.

Finally, this paper wishes to emphasise that, in studying phenomena such as MAIs in the field of inter/intra-organisational configurations, the merits of mixed methods prove meaningful (Modell, 2010). The experience has been that “hard facts” are useful to gauge what is happening across the relevant institutional environments. To this end, percentages, aggregations and trends become “real” in realising “what is going on” in an institutional field. Using the mixed approach, beyond the logic of sampling, the opportunity can be exploited to open the black box of statistical significance and to proceed to an examination of why such “trends” occur. Such cross accreditations and validation can generate a fuller account of a theoretical analysis, as has been attempted here. Nevertheless, threats to validity issues must be addressed when combining the quantitative and the qualitative. The hope is that much future research will be carried out around the issues of MAIs in different institutional environments in order to determine how to deal with the validity threats of this combined approach.

References

- Abrahamson, E., 1991. Managerial Fads and Fashions: The Diffusion and Rejection of Innovations. *The Academy of Management Review*, 16(3), 586-612.
- Al Chen, Y. S., Romocki, T. and Zuckerman, G. J., 1997. Examination of U.S.-based Japanese subsidiaries: Evidence of the transfer of the Japanese strategic cost management. *The International Journal of Accounting*, 32(4), 417-440.
- Alcouffe, S., Berland, N. and Levant, Y., 2008. Actor-networks and the diffusion of management accounting innovations: A comparative study. *Management Accounting Research*, 19(1), 1-17.
- Almeida, P., Grant, R. and Song J., 1998. The role of international corporations in cross border knowledge transfer in the semiconductor industry. In Hitt, M., Ricart-Costa J. and Nixon R. (Eds.), *Managing strategically in an interconnected world*, 119–148. Chichester: John Wiley & Sons.
- Anderson, S.W., 1995. A framework for assessing cost management system changes: the case of activity-based costing implementation at General Motors, 1986-1993. *Journal of Management Accounting Research*, 7, 1-51.
- Anderson, S.W., Young, S.M., 2001. *Implementing Management Innovations. Lessons Learned from Activity-based Costing in the US Automobile Industry*. Kluwer Academic Publishers, Boston USA.
- Askarany, D., Yazdifar, H. and Askary, S., 2010. Supply chain management, activity-based costing and organisational factors. *International Journal of Production Economics*, 127(2), 238-248.
- Ax, C. and Bjørnenak, T., 2007. Bundling and diffusion of management accounting innovations—the case of the balanced scorecard in Sweden. *Management Accounting Research*, 16(1), 1-20.
- Ax, C., Greve, J. and Nilsson, U., 2008. The impact of competition and uncertainty on the adoption of target costing. *Int. J. Production Economics*, 115, 92– 103.

- Baird, K. M., Harrison, G. L. and Reeve, R. C., 2004. Adoption of activity management practices: a note on the extent of adoption and the influence of organizational and cultural factors. *Management Accounting Research*, 15(4), 383-399.
- Baldvinsdottir, G., Burns, J., Nørreklit, H. and Scapens, R. W., 2009. The image of accountants: from bean counters to extreme accountants, *Accounting, Auditing and Accountability Journal*, 22(6), 858-882.
- Bartlett, C. A. and Ghoshal, S., 1986. Tap your subsidiaries for global reach. *Harvard Business Review*, 64, 87-94.
- Bartlett, C. A. and Ghoshal, S., 1991. Global Strategic Management: Impact on the New Frontiers of Strategy Research, *Strategic Management Journal*, 12, Special Issue: Global Strategy, 5-16.
- Berry, A.J., Coad, A.F., Harris, E.P., Otley, D.T., and Stringer, C., 2009. Emerging themes in management control: A review of recent literature, *The British Accounting Review*, 41, 2-20.
- Birkinshaw, J. and Hood, N., 1998. Multinational subsidiary evolution: capability and charter change in foreign-owned subsidiary companies. *Academy of Management Review*, 23(4), 773-795.
- Birkinshaw, J. and Hood, N., 2000. Characteristics of foreign subsidiaries in industry clusters. *Journal of International Business Studies*, 31(1), 141-154.
- Birkinshaw, J. and Morrison, A.J., 1995. Configurations of Strategy and Structure in Subsidiaries of Multinational Corporations, *Journal of International Business Studies*, 26(4), 729-754.
- Bjørnenak, T., 1997. Diffusion and accounting: the case of ABC in Norway, *Management Accounting Research*, 8(1), 3-17.
- Bol, J. C., and Moers, F., 2010. The dynamics of incentive contracting: The role of learning in the diffusion process. *Accounting, Organizations and Society*, 35, 721-736.
- Brownwell, P. and McInnes, M., 1986. Budgetary Participation, Motivation, and Managerial Performance. *The Accounting Review*, 52(4), 587-603.
- Burns, J. and Baldvinsdottir, G., 2005. An institutional perspective of accountants' new roles – the interplay of contradictions and praxis. *European Accounting Review*, 14(4), 725-757.
- Byrne, S. N. and Pierce, B., 2007. Towards a more comprehensive understanding of the roles of management accountants. *European Accounting Review*, 16(3), 469-498.
- Cadez, S. and Guilding, C., 2008. An exploratory investigation of an integrated contingency model of strategic management accounting. *Accounting, Organizations and Society*, 33(7-8), 836-863.
- Chenhall, R.H. and Langfield-Smith, K., 1998a. Adoption and benefits of management accounting practices: an Australian study, *Management Accounting Research*, 9, 1-19.
- Chenhall, R.H. and Langfield-Smith, K., 1998b. Factors influencing the role of management accounting in the development of performance measures within organizational change programs, *Management Accounting Research*, 9, 361-386.
- Chenhall, R.H., 2008. Accounting for the horizontal organization: A review essay. *Accounting, Organizations and Society*, 33, 517-550.
- Cinquini L. and Mitchell, F., 2005. Success in management accounting: lessons from the activity-based costing/management experience. *Journal of Accounting and Organisational Change*, 63-78.

- Coad, A., 1996. Smart work and hard work: explicating a learning orientation in strategic management accounting. *Management Accounting Research*. 7(4), 387-408.
- Cohen, W. and Levinthal, D., 1989. Innovation and learning: The two faces of R&D. *The Economic Journal*, 99, 569-596.
- Cohen, W. and Levinthal, D., 1990. Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128-152.
- Converse, J.M. and Presser, S., 1986. *Survey Questions: Handcrafting the Standardized Questionnaire*. Sage, Beverly Hills, CA.
- Cooper, R., 1996. Look out, management accountants, part 1. *Management Accounting*, 77(11), 20-6.
- Covaleski M. A. and Dirsmith, M. W., 1988. An Institutional Perspective on the Rise, Social Transformation, and Fall of a University Budget Category, *Administrative Science Quarterly*, 33(4), 562-587.
- Dossi, A. and Patelli, L., 2008. The decision-influencing use of performance measurement systems in relationships between headquarters and subsidiaries. *Management Accounting Research*, 19(2), 126-148.
- Dossi, A. and Patelli, L., 2010. You learn from what you measure: Financial and non-financial performance measures in multinational companies. *Long Range Planning*, 43(4), 498-526.
- Emsley, D., 2005. Restructuring the management accounting function: A note on the effect of role involvement on innovativeness. *Management Accounting Research*, 16(2), 157-177.
- Emsley, D., Nevicky, B. and Harrison, G., 2006. Effect of cognitive style and professional development on the initiation of radical and non-radical management accounting innovations, *Accounting & Finance*, 46(2), 243-264.
- Euske, K.J., Malina, M., 2013. Transfer of performance measurement system innovations across economic sectors. *Advances in Management Accounting*. 22:1, 25-42.
- Foran, M.F. and De Coster, D.T., 1974. An Experimental Study of the Effects of Participation, Authoritarianism and Feedback on Cognitive Dissonance in a Standard Setting Situation. *Accounting Review*, 751-763.
- Friedland, R. and Alford, R.R., 1991. Bringing society back in: Symbols, practices and institutional contradictions. In W.W. Powell and P.J. DiMaggio, (Eds.) *The New Institutionalism in Organizational Analysis*, 232-263, Chicago: University of Chicago Press.
- Ghoshal, S. and Westney, D.E., 1993. Introduction and overview. In: Ghoshal, S., Westney, D.E. (Eds.), *Organization Theory and the MNC*. 1-23, St. Martin's Press, New York.
- Gnyawali, D.R., Singal, M. and Mu. S., 2009. Knowledge ties among subsidiaries in MNCs: A multi-level conceptual model. *Journal of International Management*. 15(4), 387-400.
- Gupta, A.K. and Govindarajan, V., 1991. Knowledge flows and the structure of control within multinational corporations, *Academy of Management Review*. 16(4), 768-792.
- Gupta, A.K. and V. Govindarajan. 2000. Knowledge Management's Social Dimension: Lessons From Nucor Steel. *Sloan Management Review*. 42:1, 71-81.
- Hansen, M. 1999. The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly*. 44:1, 82-111.

- Hashai, N. (2009). Knowledge transfer considerations and the future of the internalization hypothesis. *International Business Review*, 18:3, 257–264.
- Hatch, N. W. and Dyer, J. H., 2004. Human capital and learning as a source of sustainable competitive advantage. *Strategic Management Journal*, 25, 1155–1178.
- Ittner, C. D. and Larcker, D. F., 2001. Assessing empirical research in managerial accounting: a value - based management perspective, *Journal of Accounting and Economics*, 32:1, 349-410.
- Jaärvempaä, M., 2007. Making business partners: a case study on how management accounting culture was changed. *European Accounting Review*, 16(1), 99–142.
- Jones C. S., 1985. An empirical study of the role of management accounting systems following takeover and merger. *Accounting, Organisations and Society*, 10(2), 177–200.
- Jones C. S., 1992. The attitudes of owner–managers towards accounting control systems following management buyout. *Accounting, Organisations and Society*, 17(2), 51–68.
- Johnston, R., Brignal, S. and Fitzgerald, L., 2002. The involvement of management accountants in operational process change. *International Journal of Operations and Production Management*. 22(12). 1325-1339.
- Kendall, L., 2008. The conduct of qualitative interview: research questions, methodological issues, and researching online. In J. Kiro, M. Knobel. C. Lancshear and D. Leu (Eds.). *Handbook of research on new literacies*. 133-149. New York: Lawrence Erlbaum Associate.
- Kennedy M.T. and Fiss, P.C., 2009. Institutionalisation, framing, and diffusion: the logic of TQM adoption and implementation decisions among U.S. Hospitals. *Academy of Management Journal*, 52(5), 897-918.
- Kogut, B. and Zander, U., 1993. Knowledge of the firm and the evolutionary theory of the multinational corporation. *Journal of International Business Studies*, 24(4), 625–645.
- Kostova, T., 1998. The quality of inter-unit relationships in MNEs as a source of competitive advantage. In: Hitt, M., Ricart i Costa, J., Nixon, R. (Eds.), *New Managerial Mindsets: Organizational Transformation and Strategy Implementation*. Wiley, New York, 299–324.
- Kostova, T., 1999. Transnational transfer of strategic organizational practices: a contextual perspective. *Academy of Management Review*. 24, 308–324.
- Kraus K. and Lind, J., 2010. The impact of the corporate balanced scorecard on corporate control-A research note. *Management Accounting Research*, 21(4), 265-277.
- Krumwiede, K.R., 1998. The implementation stages of activity-based costing and the impact of contextual and organizational factors. *Journal of Management Accounting Research*, 10, 239–277.
- Langfield-Smith K., 2008. Strategic management accounting: how far have we come in 25 years?, *Accounting, Auditing & Accountability Journal*. 21(2), 204-228.
- Lapsley, I. and Wright, E., 2004. The diffusion of management accounting innovations in the public sector: a research agenda. *Management Accounting Research*. 15(3), 355-374.
- Lillis, A.M., Mundy, J., 2005. Cross-sectional field studies in management accounting research - Closing the gaps between surveys and case studies. *Journal of Management Accounting Research*. 17(1), 1–23.
- Manev, I. M., 2003. The managerial network in a multinational enterprise and the resource profiles of subsidiaries. *Journal of International Management*, 9, 133-151.

- Meyer, K. E., Mudambi, R., and Narula, R., 2011. Multinational enterprises and local contexts: The opportunities and challenges of multiple embeddedness. *Journal of Management Studies*, 48, 235–252.
- Michailova, S. and Mustaffa, Z., 2012. Subsidiary knowledge flows in multinational corporations: Research accomplishments, gaps, and opportunities. *Journal of World Business*, 47(3), 383–396.
- Michailova, S. and Zhan, W. 2015. Dynamic capabilities and innovation in MNC subsidiaries. *Journal of World Business*. 50 (3), Pp. 576–583.
- Miller, P., Kurunmäki, L. and O’Leary, T., 2008. Accounting, hybrids and the management of risk. *Accounting, Organizations and Society*, 33(7–7), 942–967.
- Modell, S., 2005. Triangulation between Case Study and Survey Methods in Management Accounting Research: An Assessment of Validity Implications. *Management Accounting Research*, 16, 231–254.
- Modell, S., 2009. Bundling management control innovations: a field study of organizational experimenting with total quality management and the balanced scorecard. *Accounting, Auditing and Accountability Journal*, 22(1), 59–90.
- Modell, S., 2010. Bridging the paradigm divide in management accounting research: the role of mixed methods approaches. *Management Accounting Research*, 21(2), 124–129.
- Modell, S. (2015). Making institutional accounting research critical: Dead end or new beginning? *Accounting, Auditing & Accountability Journal*, 16(5), 727–761.
- Mudambi, R., 2002. Knowledge Management in Multinational Firms. *Journal of International Management*, 8(1), 1–9.
- Narandjo-Gil, D., Maas, C.S. and Hartmann, F.G.H., 2009. How CFOs determine management accounting innovation: an examination of direct and indirect effects. *European Accounting Review*, 18(4), 667–95.
- Oliver, C., 1991. Strategic Responses to Institutional Processes. *Academy of Management Review*, 16(1), 145–179.
- O’Donnell, S. W., 2000. Managing foreign subsidiary: agents of headquarters, or an interdependent network?, *Strategic Management Journal*, 21(5), 525–548.
- Phene, A. and Almeida, P., 2008. Innovation in multinational subsidiaries: The role of knowledge assimilation and subsidiary capabilities, *Journal of International Business Studies*, 39, 901–919.
- Pierce, B., O’Dea, T., 2003. Management accounting information and the needs of managers – perceptions of managers and accountants compared. *British Accounting Review*. 35, 257–290.
- Rogers, E.M., 1983. *Diffusion of Innovations* (3rd ed.), The Free Press, New York.
- Rogers, E.M., 1995. *Diffusion of Innovations* (4th ed.), The Free Press, New York.
- Rogers, E.M. 2003. *Diffusion of Innovations* (4th ed.), The Free Press, New York.
- Saavedra, R., Earley, P. C. and Dyne, L. V., 1993. Complex interdependence in task-performing groups. *Journal of Applied Psychology*, 78, 61–72.
- Schoute, M., 2000. The evaluation of management accounting innovations: some methodological issues. Paper presented at the Second Conference in New Directions in Management Accounting: Innovations in Practice and Research, European Institute of Advanced Studies in Management, Brussels.
- Sewell, W.H., 1992. A theory of structure: Duality, agency and transformation. *American Journal of Sociology*, 101, 993–1027.
- Shields, M.D., 1995. An empirical analysis of firms’ implementation experiences with activity based costing. *Journal of Management Accounting Research*, 7, 1–28.

- Stopford, J. and Wells, L., 1972. *Strategy and structure of the multinational enterprise*. New York: Basic Books.
- Teece, D.J., Pisano, G. and Shuen, A., 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*, 18, 509-534.
- Tillmann, K. and Goddard, A., 2008. Strategic management accounting and sense-making in a multinational company. *Management Accounting Research*, 19(1), March, 80-102.
- Tippmann, E., Scott P. S. and Mangematin, V., 2014. Subsidiary managers' knowledge mobilizations: Unpacking emergent knowledge flows. *Journal of World Business*, 49(3), 431-443.
- Tushman, M. L. 1977. Special boundary roles in the innovation process. *Administrative Science Quarterly*, 22, 587-605.
- Van der Stede W. A., 2003. The effect of national culture on management control and incentive system design in multi-business firms: evidence of intracorporate isomorphism. *European Accounting Review*, 12(2), 263-285.
- Westney, D. E. (1993). Institutionalization theory and the multinational corporation. In S. Ghoshal, D. E. Westney (Eds.). *Organization theory and the multi-national corporation* (pp. 53±76). New York: St Martin's Press.
- White, R.E., and Poynter, T.A., 1984. Strategies for foreign-owned subsidiaries in Canada. *Business Quarterly*, 49 (Summer), 59-69.
- Yazdifar, H. and Tsamnyi, M., 2005. Management accounting change and the changing roles of management accountants: a comparative analysis between dependent and independent organizations. *Journal of Accounting and Organizational Change*. 1(2), 180-98.
- Yazdifar, H., Zaman, M., Tsamenyi, M. and Askarany, D., 2008a. Management accounting change in a subsidiary organization. *Critical Perspectives on Accounting*, 19, 404-430.
- Yazdifar, H., Askarany, D. and Askary, S., 2008b. Management Accountants' Role in dependent and independent companies: Does Ownership Matter?, *Journal of Accounting, Business and Management*, 15(2), 1-21.
- Yazdifar, H. and Askarany, D., 2012. A comparative study of the adoption and implementation of target costing in the UK, Australia and New Zealand. *International Journal of Production Economics*. 135, 382-92.

Table 1: The proportion of dependent and independent companies

		<u>Independent</u>	<u>Dependent</u>	<u>Total</u>
		%	%	%
The proportion of dependent and independent companies participated in the survey	Country: UK	89.1	<u>10.9</u>	100%
	NZ	83.5	<u>16.5</u>	100%
	AU	61	<u>39</u>	100%
	Total	72.8	27.2	100%
Industry sector and ownership type	Manufacturing	23.7	12.6	36.3
	Service	<u>49.1</u>	<u>14.6</u>	<u>63.7</u>
	Total	72.8	27.2	100%
Organisation size (no of employees)	Less than 100	31.8	24.4	29.9
	100-500	29.6	39.4	32.1
	More than 500	<u>38.6</u>	<u>36.2</u>	<u>38</u>
	Total	100%	100%	100%

(Source of data: questionnaire survey)

Table 2: The extent of diffusion of MAIs

<u>MAIs</u>	<u>Independent</u>	<u>Dependent</u>	<u>Total</u>
	%	(subsidiary) %	%
ABC	25.5	33.1	27.6
ABM	19.1	22.5	20
BSC	34.4	48.3	38.2
Benchmarking	49.4	62.9	53.1
TC	23.1	23.8	23.3

(Source of data: questionnaire survey)

Chi-Square Tests			
ABC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.097	4	0.192
ABM	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.003	4	0.061
BSC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.657	4	0.047
Benchmarking	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.371	4	0.023
TC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.396	4	0.355

Table 3: Sources of MAIs diffusion in dependent organisations

Methods of diffusion of MAIs in group companies	ABC	%	ABM	%	BSC	%	Benchmarking	%	TC	%	Total MAIs adopted	Total %
Decided by parent organisation	12	43	11	61	7	37	13	62	15	68	58	53.7
Decided by subsidiary organisation after another subsidiary had implemented it	10	36	2	11	8	42	4	19	2	9	26	24.1
Jointly decided by two or more subsidiaries	2	7	2	11	1	5	3	14	2	9	10	9.2
Decided by subsidiary organisation with no previous adoption within the group	4	14	3	17	3	16	1	5	3	14	14	13
Total	28	100%	18	100%	19	100%	21	100%	22	100%	108	100%

(Source of data: interviews)

Table 4: Stages of implementation of MAIs in dependent and independent organisations

MAIs	All levels / stages of implementation	Independent organisations %	All dependents (subsidiary) %	56 interviewed dependents (subsidiary) %
ABC	- Activity analysis	13.9	8.5	9.1
	- The identification of cost drivers	-	-	-
	- Allocation of cost to cost pools	54.3	43.7	41.3
	- Revised product costing based on activity not volume	31.8	47.8	49.6
		100%	100%	100%
ABM	- Activity analysis	19.1	24.5	19.7
	- The identification of value-adding and non-value adding drivers	22.6	32.1	38.4
	- The identification of separate drivers of cost, quality, response and innovation	21.7	7.5	11.1
	- Adoption of strategies to impact on performance of key drivers	36.6	35.9	30.8
		100%	100%	100%
BSC	- Establishment of detailed corporate objectives and critical success areas	14.7	10.5	7.4
	- Measurement of overall performance based on a linked combination of financial and non-financial indicators	31.5	30.5	26.2
	- Communication and commitment to separate measures used to evaluate finance, processes, innovation and customers	26.1	33.7	36.3
	- Review of the implementation of strategies devised to impact on specific measures in the scorecard	27.7	25.3	30.1
		100%	100%	100%
Benchmarking	- Identification of critical success areas and associated key performance measures	15.2	17.2	11.4
	- Comparison of own performance with that of publicly available measures for similar companies	24.5	31.2	35.6
	- Collaboration with appropriate benchmarking partners identified to compare internal processes	24.5	19.4	22.2
	- Devising of strategies which address identified performance deficiencies	35.8	32.2	30.8
		100%	100%	100%
TC	- Identification of target product cost as the difference between expected price and required profit	24.8	23.7	25.6
	- Adoption of cost cutting strategies at the production stage to approach target	13.2	20.3	23.1
	- Examination of all cost reducing strategies at the planning and pre-production stages	28.1	32.3	29.4
	- Adoption of value engineering to incorporate customer requirements	33.9	23.7	21.9
		100%	100%	100%

(Source of data: Data for Independent organisations and all subsidiaries from questionnaire
Data for 56 interviewed subsidiaries – i.e., the first 2 columns from the right from interviews)

Chi-Square Tests			
ABC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.523	2	.014

ABM	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.736	3	.033

BSC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.727	3	.003

Benchmarking	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.150	3	.043

TC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.615	3	.014

(Source: Questionnaire survey - Data for Independent organisations and all dependent organisations)

Table 5: Diffusion sources and implementation stages in group-organisation – data derived from the interviews

Chi-Square Tests			
ABC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.381	6	0.031

ABM	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.974	9	0.003

BSC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.814	9	0.224

Benchmarking	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.906	9	0.026

TC	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.532	9	0.041

(Source: The sources (channels) of MAIs in Table 3 and their levels of implementation in 56 subsidiaries indicated in Table 4 which both data are derived from interviews)